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ABSTRACT

This document reviews a number of recent studies written in French that investigate the nature of communication between 2-year-old infants and others. The review includes three parts. The first part focuses on studies aiming to constitute a behavioral catalog of the child. Characteristically, these studies offer a posteriori interpretations of relationships between language usage and other forms of behavior and cannot explicate the active role of adult and child in their mutual control of interaction. The second part reviews studies made to delineate sequential dependencies between the child's conduct and that of interlocutors. These studies have in common the search for a minimal element of analysis in explorations of the bidirectional nature of exchanges and their construction in time. The third section reports terminological changes made since the 1970s in research in human communication. Noted are increased specificity about what may be studied as communication involving infants and increased awareness that, since communicative interactions play a role in shaping the psychological organization of the child, the study of communication is essential. (RH)

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COMMUNICATION DURING THE SECOND YEAR OF CHILDHOOD : RECENT RESEARCH IN FRANCE AND FRENCH-SPEAKING COUNTRIES*

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The study of manifestations in the psychological development of two year olds is far from being exhausted. The small number of articles in French dealing with this particular age group is in sharp contrast with the blossoming of research work undertaken which deals with the first year of childhood, as has been proved by the recent publication of a symposium on the "first stages of development" (A.P.S.L.F. 1983) and two special issues of "ENFANCE" magazine which are devoted to "the first year".

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Several reasons may be called upon in order to explain this state of affairs. The first are of a technical or methodological order. Whereas very young infants "respond" relatively well in an experimental context, older children, particularly during the second year of childhood, can hardly bear being confined in a restricted space, and the reaction is even stronger when it comes to tolerating technical apparatus. Their intensely felt need to be even moving is largely responsible for this. The child will frequently stand up, walk around, clamber over things, climb up onto toys, etc, and all these different forms of behaviour mean that often the psychologist has to abandon all hope of operationalizing a particular variable because the child rejects the selected operationalization. The problems studied are thus often limited to those which are open to direct observation, whether it be scheduled or not, and the skill of the researcher resides in the more or less astute way with which he comes up whith a relatively familiar and unrestraining situation for the child.

Other, more fundamental reasons, arise from the very nature of development processes in the second year of childhood. The control of body movements, which is the subject of many hours of activity when learning to walk, represents not only a technical "obstacle"; it also leads to far-reaching reorganizations not just on the level of the discovery of space, but also, by way of the independence of movement which it procures for the child, on the level of the discovery of new relationship patterns with adults or other children. The same goes for the development of language : the latter is not just an aid for evoking absent objects, it also means the discovery of a whole new field of exchanges with one's immediate circle. Pretence, humour and fiction play a role just as important as designation.

Between the automation of skills acquired during the first year of chilhood and the annexation of new modes of relationships with others and the capacity for controlling one's own actions, the two year old presents a very wide range of more or less transient forms of behaviour which are difficult to grasp as a direct result of the psychological characteristics of the subjects themselves.

It is doubtlessly on the level of communication with his immediate circle that the development of the two-year-old presents the most striking changes : the child masters the first complex behavioural forms of imitation of the praxias and attitudes of those around him; oral language and conventional gestures enable him to formulate offers, requests, and desires; the first attempts at makebelieve and the first forms of non-verbal symbolic conduct appear.

All this has already been underlined, in particular by GUILLAUME (1926), PIAGET (1931), and WALLON (1942), as was recently pointed out by GALIFRET-GRANJON (1981).

However, it was only from the 1970s onwards that studies dealing specifically with communications produced by young children and their immediate circle (adult, older children, or peers) started to provide new information and, above all, attempted to perfect new ways of studying communication phenomena in the field of young children.

One of the fundamental themes explored during this period is that of "social communication", which was introduced in two ways. On the one hand, as a result of research into language learning, the upsurge of "generative grammars" followed by "rich functional analyses" have led to an interest for phrases of one or two words which are produced during the second year. It was discovered that through the use of language, the child was able to achieve the general functions of communication. On the other hand, it was also introduced as a result of research into non-verbal communica-

tion existing prior to the acquisition of language (pre-verbal), or which accompany the use of language (para-verbal), or which even underlie the use of language itself (infra-verbal). In this respect, the second year of childhood appears as a link year : pre-verbal or infra-verbal forms of communication become installed, language and para-verbal forms begin developing at the same time as relationships with other people become modified with much greater independence for the child.

In the present paper, I intend to analyse a number of recently published studies written in French which, in one way or another, pose the question of communication with others during the second year of childhood. The first part will be devoted to those which aim at constituting a behavioural catalogue of the child, and the second part will be devoted to research on the level of analysing interactions, the third part being devoted to notional transformations - relative to the notion of communication and development patterns - which have accompanied these developments on the level of methodology.

I. STUDIES AIMING AT A BEHAVIOURAL CATALOGUE OF THE CHILD

Recent studies, whether concerning the development of non-verbal communications or the early development of language, can be divided schematically into two main categories from a methodological point of view : those dealing with the behavioural catalogue of infants for its own sake; and those which study interaction between a child and a member of his/her circle (another child or an adult) as a research object. For each of these categories the levels of operational definition of variables are different. For the clearness of presentation, I shall distinguish between those studies which deal with "communications" on the one hand, and those which deal with the "development of language" on the other.

From the 1970s onwards, non-verbal communications became the subject of several important studies stemming from ethology. MONTAGNER (1974, 1978, 1982) was responsible for the systematic introduction of ethological observation methods for the analysis of exchanges between children and other children or adults. He is currently studying over 1200 children aged between several days and three years and over, i.e. above and below the retained period of age. With particular respect to the latter, MONTAGNER (1982) has managed to draw up an "inventory of elementary forms of social behaviour" composed of items of alliance and appeasement (often followed by "mutual imitations, co-operation, body or verbal dialogues, etc"); items of threat and aggression, items of fear and retreat, items of isolation.

All these forms of behaviour may be manifested from the 6th to the 16th month by all the children examined whatever their origins. This fact enables the author to talk of "universals". The longitudinal study of infants up to the 26th month reveals "that on the basis of the common catalogue... children tend to "select" certain forms of behaviour rather than others during their 2nd year, most often once they start

walking" (p. 175). This tendency would even appear to affirm itself during the 3rd year. This constitutes a "second level of organization of forms of communication behaviour" little dependent on genetic influences, but which, in retrospect, "is strongly influenced by the behaviour of the family towards the child" upon which ultimately depends "the place the child occupies within the group" (p.177).

The contribution made by these studies is particularly important on several counts. Firstly, because they have attracted attention to the large number of efficient exchanges on the level of interaction which have no need of language in order to be manifested (not only during the second year of childhood, but even much later on!). Secondly, as a result of their contribution to objectivity : the very conditions of observation, the elaboration of well-defined, precise and reliable criteria for describing forms of behaviour, etc. All this has assisted in founding the dynamics for the study of non-verbal communications and has made an essential contribution to the latter.

However, if this approach has fortunately been able to resolve a certain number of problems, it has left others in the dark and has perhaps even strengthened the difficulty of some particular questions. The most important of these doubtlessly concerns the relation that exists between the technical effort to describe forms of behaviour and the psychological status with which they are accorded. Indeed, it is as if the forms of behaviour studied, by way of their morphological stability, retained the same status throughout the development process. Studying forms of threatening, pacifying and aggressive behaviour from "six to twenty-six months" is to admit (unless it is explicitly denied) that these forms of behaviour always retain the same status for the child. This has two practical consequences.

The first of these is the constitution, whether it is desired or not, of psychological "types" : accumulating longi-

tudinal observations has led MONTAGNER to describe development in terms of "individual characteristics" :(primary organization) or of selection (second level) the forms of behaviour manifested are related much more to the child itself than to the situations within which they occur - hence the description of "types" in the early stages of the research.

The second consequence of the adopted approach has been to evacuate - for reasons of objective description - the problem of the relation of described forms of behaviour, not only to situations, but above all to other behavioural elaborations on the cognitive, social, and emotional levels. Take the example of forms of threatening behaviour. Their description in strictly morphological terms (open mouth, piercing screams, frowning) is useful - even indispensable. However, how can one possibly ignore the fact that as far as human ontogenesis is concerned, they developed at the same time as the capacity to anticipate other people's reactions, which is expressed in other forms of behaviour which several authors class, for example, as "intentional conduct". This is a point on which ROUCHOUSE (1978, 1982) insists particularly, also making use of a type of methodological observation inspired by ethology. His study of threats and aggression - providing a description which is closely related to that of MONTAGNER, thus confirming the quality of the observation checklist - is particularly interesting since it leads him to the conclusion that "the evolution of the mode of appropriation (of the object) accounts for a certain number of apparently unprovoked aggressions which have been observed by numerous researchers" (p.279). The increasing number of acts of aggression during the second year of childhood could perhaps be explained by the extending of the length of time objects are appropriated : whereas at around the age of 10 months the child considers that he has possession of an object for as long as he has it in his hands, the 18 to 20 month old seems to award himself a "period of exclusive use"" of the object. The result is interference between the different and independent planned uses envisaged by children, thus leading to conflicts crystallized by physical acts of violence. A similar approach was adopted for the study

of threatening behaviour which, in the words of ROUCHOUSE, must necessarily be preceded by an "awareness of the intentions of the other person".

On the explanatory level, ROUCHOUSE's approach refers to the concomitant construction of cognitive or emotional forms of conduct, and thus seems to remove one of the difficulties discussed above, although at the same time raising another : interpretation is only made at a later stage, which fact reduces to a large extent the explicative or even heuristic powers of this approach. If one is to be in a position to be able to give an opinion on the mechanisms and factors in the development of communication behaviour, on the type of relations the latter maintains with other development phenomena, all data must be prehended at the exact moment they are described.

It was in this perspective that, in recent years, several research studies have been published dealing whith exchanges between children and the control of language.

In one study centred around "The evolution of exchanges between children", DUBON, JOSSE, and LEZINE (1981) have defined a method of approach to observation in the habitual environment (a term which the authors have substituted for the over ambigous "natural" environment) where they attempt to pinpoint "the variety and complexity of signals employed by both partners, the constructive role of the child in communicating with the adult". The information is presented in relation to a functional chronology : prior to controlled grasping and crawling, before walking, after walking. Only the last two iterms concern us here. Prior to walking, the authors note that "the best possible control of visual activity will enable the child to control his contacts with interlocuters, being in turn the subject of subtle observation, evasion, and detours". Also, they have discovered that the mimo-gestural catalogue becomes wider and that mimo-gestural communication increases on a plane with improved control of one's own body (stylization of mimicry gives them an increasingly obvious suggestive or nominative character). Body

contacts become more and more frequent, and the child's persistence in imitating and maintaining these contacts "incites the observer to talk of exchanges of an intentional nature". (P.279).

As far as the phase after learning to walk is concerned, the appearance of the semiotic function accounts for most of the transformations : i.e. the facial expression (enabling the child to act on others at a distance), mimo-gestural activity - where the child simulates dialogues or speech, the appearance of verbal communication and the change of status of objects which, from being a support for sensori-motor activities, become a pretext for simulation, praxis, evocation, laughter, the universes of a child living within its own family circle contains no end of riches. In this respect the text is particularly suggestive, as is the case with the films edited from filmed observations.

However, the absence of any quantification renders impossible the determining of any exact date of appearance, or frequency, or even those conditions which are present when the different forms of behaviour mentioned are set in motion : a fortiori it is also not possible to make any hypothetical predictions concerning the relations between the different sectors of behaviour. Nevertheless the authors present a good deal of observations bearing on the segments of action and retro-action by children amongst themselves, in a perspective not only of interaction, but of real communication, e.g. mastering the first focalized gestures : clapping, pointing, nodding or shaking the head. The method selected does not provide the means for the realization of a "bi-directional and sequential" analysis, to echo the voice of F.FLAMENT (1983), which is alone in permitting the study of the constructive role of interaction in the process of controlling the means of communication.

The preceding remarks are also valid for MALRIEU and DELSOL's research (1972). Unlike the already discussed studies, this one has the specific aim of treating "the control of language during the second year of childhood". The analysis is based on the conditions of passing from vocalizations to verbali-

zations. It relates this passage to the changes taking place on the level of sensori - motor behaviour and interpersonal relationships, changes which are a contributing factor in the shaping of an attitude of control of the types of behaviour which leads the child to "repress vocalizations, correct spontaneous phonemes, inexact meanings, and effect differenciations enabling him to be understood by others" (p. 42).

A functional classification divides vocalizations into three classes : vocalizations expressing emotion (joy/desire/discontent/rejection); vocalizations accompanying actions upon objects (in particular, those which punctuate periods of action and which denote the motor relaxation marking their end); vocalizations contained within proto-dialogues : serving to designate objects, answer interlocuters, these are permeated by imitations.

The transformation of vocalizations into verbalizations takes place over three stages. In the first stage, reciprocal imitations become a part of circular games introducing successive rectifications. In the second stage, "defered imitations intervene which are used with the aim of acting on others with the aid of words borrowed from the adult". From the point of view of comprehension, interdictions and orders are clearly understood. Finally, in the third part can be seen the spontaneous use of words taken from outside the context of "answering a question". Indeed, many responses which are present during the previous phase have a function of designation, but one which is "sparked off by the question". On the contrary, in this third phase, the child appears to have the initiative of a judgement of designation; this is the doorway to "enunciations". The latter appear above all as judgements of denomination, narration, and interrogation.

The prepared data were procured during a series of longitudinal observations carried out on two female infants. These observations were partly recorded within the child's own family unit. In this way, their vocalizations and verbalizations were

documented as well as the situation within which they occured; in the same way, a periodical check was made on their development (using the BRUNET LEZINE scale). The observer also took into account any phenomena within the family which might have an effect on the development of the child (presence or absence of parents in the home, presence or absence of brothers and sisters...).

Cross-checking these different elements of information, taking into account the chronology of development, enabled the authors to make inferences on factors acting simultaneously on the control of language. Thus, sensori -motor improvements alter the nature of imitative activities. It is once walking has been completely mastered that one notices "closely controlled skilful forms of behaviour... which demand the co-ordination of several movements and their subordination to the model; ... they bring into play, as well as the desire to master things physically, the desire to identify with an adult by way of a controlled imitation" (p.51). Similarly, the style of personal relationships is a factor in the transformation of forms of behaviour. As the child understands and controls his own actions, the parents "stop playing with him according to a circular mode and get him to imitate them using finalized behaviour". The transformation of parents' attitudes, in relation to changes manifested by the child during his development, obliges the child to modify his own behaviour. Thus, the first vocatives, the first imperatives, the first expressions of refusal, appear linked to the refusal of the parents to respond to vocalizations.

As with the case of the last research study discussed, the explicative model invoked constantly refers to the constructive value of exchanges (note that here they concern above all the adult interlocuter). However, there again, it is a posteriori that the data relating to language and those concerning other forms of behaviour are brought together. Naturally, the longitudinal monitoring of the two children enables to evidence concomitances and sequences which have meaning in relation to one particular child, which is not always the case for the other

studies already discussed, but the fact remains that the interpretative hypotheses are suggested once again after the event. Moreover, the method employed reveals only the productions of the child on the level of language. Even in the presence of details concerning the context, this would still be insufficient in order to monitor the active role of the adult and of the child as far as mutual control is concerned : this would require monitoring of the effects of sequential dependence.

II. STUDIES AIMED AT EVIDENCING SEQUENTIAL DEPENDENCIES BETWEEN THE CHILD'S CONDUCT AND THAT OF HIS INTERLOCUTERS

This type of research is even more limited as regards the second year of childhood. It has often been inspired by methods elaborated around the experimental study of interactions between children and other children or adults during the first year of childhood.

VENEZIANO (1982) devoted one research project to "conversational exchanges between mother and child in the early stages of language learning". The author made a longitudinal study of six Hebrew-speaking mother and child dyads from the age of 9 months to the age of 19 months. The originality of this study when compared with the previous ones, was to adopt directly as an element of analysis the relation between successive turn-taking between mother and child on the level of voicing : " a voiced exchange is defined operationally as a conversational exchange within which the mother's (or child's) turn takes up voiced elements present in the immediately preceding child's (or mother's)turn, or if explicit reference is made to it". The author is thus led to distinguish between simple exchanges (repetition by one partner alone) and reciprocal exchanges when a double repetition takes place in immediate succession (M→C→M→C) : in the case of the latter, we obtain a direct indication of coordination between the two partners. On another level, it is advisable to distinguish speech sequences : when an exchange is followed by a turn in which reference is made to a voiced element differend to that expressed in the previous exchange.

From the point of view of content, exchanges are classed as accommodative (accommodation of one partner's voiced production to that of the other), unintelligible (repetitive voiced games with or without accommodation), lexical with three levels of its own (minimal, vocalic, or spirent, partially reproduced articulate sounds, wholly reproduced articulate sounds) bearing on one or several elements.

The results indicate a clear increase in the absolute number of exchange throughout the 14th and 16th months; the repetition which initiates the exchange is first of all essentially that of the child (10 - 12 months), then after the age of 12 months, it is more the mother who picks up the sounds produced by the child. Reciprocal exchanges are more frequent from the 14th month onwards. This is all part of the general increase of exchanges at this particular age. They are particularly numerous whenever their content is of a lexical nature. Correlatively, the number of unintelligible exchanges diminishes considerably after the age of 14 months.

The different categories of lexical exchanges do not evolve in a parallel fashion. Minimal exchanges from nearly half of the lexical exchanges at the age of 12 months and then fall off to reach under 10% at 17 months. Partially reproduced articulate sounds undergo a quasi-constant increase (more than 50% at 17months). Wholly reproduced articulate sounds only increase perceptibly after the age of 16 - 17 months.

All this converges to confirm the fact that during the second year of life a baby witnesses a change of status, and this is reflected in the selection of the forms of behaviour the adult will make in relation to the child : for the group under study, 14 months would seem to be an important transitional period - not only does the baby show proof of increased initiative as far as the turn-taking is concerned, as well as the prolonging of the exchange (reciprocal exchanges), but in a parallel manner the mother hardly ever picks up unintelligible exchanges, nor does she progressively pick up the minima lexical exchanges; on the contrary, it is the speaker in the child the mother is

appealing to when she centres her repetitions on partially articulate sounds - before, at the end of the period, doing the same thing with wholly articulate sounds.

The approach to phenomena of interaction and sequential effects is not just restricted to vocal and verbal interactions.

Indeed, two recent studies were devoted to pre-verbal communication and the organization of a game of exchanging an object : VERBA (1982), and DELEAU and GRENECHE (1982) respectively. VERBA's article analyses exchanges between children which take place in particular situations characterized as "social games" since they imply two or more participants whose actions "are complementary and constitute messages which the partner strives to understand and answer". In particular, the study is concerned with activities organized as role playing games (peep-bo, exchanges, pursuits, provoking laughter...). The games for two or three which are taken as examples are : licking paper and climbing into a large cardboard box, allowing the children to either explore or play hide-and-seek. Analysis is made on two levels, one of which is macroscopic and isolates sequences including children participating in an activity which thus becomes common to them. There is a sequence "when two or more children get together to carry out an activity which can be defined globally". Each identified sequence includes a minimum of two units of interaction : behaviour that is directed towards a partner, and a response from the latter. Only sequences whose content is close to role-playing games are retained for analysis.

The sequences thus being defined, microscopic analysis enables one to determine by which procedure(s) offers, acceptance or refusal, agreement or disagreement... stand out among children of similar age (between 12.5 and 14.5 months).

The necessity to account for the dynamics of interactions has led VERBA to present the results in the form of a scenario which, despite differences on the level of content and methods

of approach, presents striking similarities : " once the partners have met ... occurs what could be termed a proposal to play together. This "proposal" consists quite simply in doing something and watching the reaction of the partner... or else immediately stating, with some degree of contentment, what one expects of the other... After agreement or disagreement, a small plan begins to take shape as it goes along, each of the children attempting to attract the attention of the other, to "signify" him what is expected or to understand what he wants" (p.154).

As for the communication processes themselves, the children studied mastered their taking of turns : "each child addresses himself to the other, alternately, expecting a response... Thus, Isabelle, who is proposing a game of licking paper, makes Anthony understand her by way of an explicit gesture, putting the paper against her mouth, so that he sees that he has to lick it. Since Anthony has understood, she proposes the same game the next time round, but without expliciting. In the same way, Anthony, in order to attract the attention of Isabelle who has disdained his offer, makes a requesting movement. The movement is accompanied by angry sounding vocalizations".

This short example is a reasonable illustration of the way each of the two children control the transmitters, regulating the messages in relation to the reactions of the interlocuter: the economy of means in the first case, leaving the second proposal a greater amount of implicitness; the emphasis in the second case when faced with an interlocuter refusing to give way to a request. In such situations, children implement forms of communication which, although not yet making use of oral language, have a dialogue-type structure : the behaviour of the transmitter is determined at the same time by the pursuit of an aim and by the response of the receiver in a series of successive "turns". This dimension has, however, not been exploited during the analysis which, when all is said and done, makes reference to the powerful desire " of wanting to be together and act together - which would appear to motivate these children to manifest their imaginative possibilities and to implement and develop their ability to communicate".

The direct study of sequential dependencies between partners in an exchange has been the subject of another attempt, more analytical than the previous one, but which places the accent on closely related phenomena.

As a matter of fact, a study made by DELEAU and GRENECHE (1982) was undertaken with the aim of analysing the organization of interactions child-adult in a situation of exchanging objects. This was done placing greater emphasis on the mastering by the child of the positions of "request" and "offer" on the one hand, and the means used by the adult in order to conventionalize his actions addressed to the child on the other.

An earlier study (DELEAU and COUTURIER, 1982) in fact confirmed that the child shows no initiative in a situation of exchanging an object until around the age of 10 months, and when it does so, it is as much on the level of "offering" as "asking" This not only leads to the evacuation of the hypothesis that the gesture of request is derived from the gesture of grabbing, but on the contrary suggests that the child is expressing an awareness of the solidarity of the roles. This same study also enabled the authors to conclude that in such a situation, the adult expresses his intentions in a highly standardized manner which is also adapted to the rapidity with which the child acts (in particular, becoming increasingly elliptic as the situation becomes more and more commonplace between the adult and child and the latter automatizes his requests).

For this study, 19 children were examined from three age groups : 10 - 12 months (N=8); 13 - 15 months (N=4); 16 - 18 months (N=7), each group being examined once during a game led by the playgroup supervisor : thus, the environment and the person intervening were quite familiar to the children who had all been attending the playgroup for a certain number of months.

The objects to be exchanged constituted two distinct pairs: dish + spoon, doll + feeding bottle. The instructions given to the adult quite simply stipulated that she had to try and "play with the child, giving him objects and then asking for them,

first with the aid of dishes and spoons, then with dolls and feeding bottles". Five minutes were given for each pair of objects.

The analysis reveals sequences made up by the falling into series of the actions of both partners. These sequences are complete when the partner responds in a manner adapted to the request, incomplete in the event of failure to respond, reciprocal when two complete sequences follow in rapid succession. The results concern the frequency of the different types of sequence whether the initiative was taken by the child or the adult in the different age groups. Since no differences were apparent amongst the two types of materials (dish, spoon/doll, feeding bottle), the results were cumulated and revealed two interesting elements. Firstly, confirmation of the fact that the child takes the initiative for two positions of offering and requesting: if the number of times the initiative is taken in each position is counted, one discovers that there is no significant difference according to age group; secondly, the indication that the child acquires a real degree of autonomy in the exchange process - this can be evaluated in two days, firstly, by calculating the frequency of the number of times the child takes the initiative during reciprocal exchanges (Table I).

insert Table I

Reciprocal initiative taking indicates the capacity of the child to prolong the exchange, to give it new vigour; but it is also interesting to note that this "capacity to give fresh impetus" is accompanied by an increasingly greater degree of independence compared with the adult's preceding action : whereas, for the youngest children, the reciprocal initiative is just a "mirroring" of the adult's action, for the older children, it is independent from the adult's immediately preceding action (Table II).

insert Table II

The group of studies to which reference has just been made thus has the particularity of having defined as a subject for analysis the precesses of communication in themselves, during their realization, of attempting to elaborate specific study techniques which will allow the evidencing of the dynamics of exchanges. They doubtlessly present notable differences : VENEZIANO's study, for example, shows the transformations within the dyad during the second year of childhood, which neither VERBA, nor DELEAU and GRENECHE are able to do since they proceed either by cross-section analysis or by just studying one particular age group. But they have in common the search for a minimal element of analysis for which the name tags "simple exchange", "reciprocal exchange" (VENEZIANO), "sequences" (VERBA), "complete, incomplete, or reciprocal sequences" (DELEAU and GRENECHE), are proof of the willingness to study the bi-directional nature of exchanges as well as their time construction.

III. THE EVOLUTION OF NOTIONS

The methodological developments I have examined previously have been accompanied by a redefining of the fields of investigation and a more precise analysis of the processes of communication.

The redefining of fields appeared clearly on the level of terminology. In the 1970s, the terms used in communication, interaction, exchange, or even intersubjectivity, appearing in most articles were considered to be more or less equivalent. This explains why one could come across expressions like "olfactive communications" and "verbal interactions". The choice of term corresponds to the authors' desire to connote some of their theoretical or methodological positions rather than to the desire to distinguish between different processes. "Interaction" most often indicates a descriptive and quantitative desire;"exchanges" that of treating phenomena in the field of inter-indi-

vidual relations in their globality; "communication" - although it must be admitted that it was hardly used during the period interesting us here - is used for the study of information transfers.

One of the first results of the studies I have just mentioned was to refine notional differences, in particular, being more specific about what may be studied as "communication" when dealing with infants.

That which may be studied as "communication" is a class of interactive events within which there is an intention to produce a particular effect on a partner. This effect is the construction of a common universe of reference, i.e. a set of objects of reference, real or symbolic, and co-actions which are to be carried out on these objects.

From this point of view, what can be considered as communication is the set of means leading to the constitution of the co-reference : the indication that it is achieved by manually pointing or turning one's look, designation, whether it be verbal or use a conventionalized gesture...

Certain forms of behaviour often studied elsewhere are not necessarily in this respect forms of communication behaviour: behaviour in the fields of struggle, aggression or menace, for example, naturally constitute essential interactive phenomena, but that is hardly enough for them to be considered as phenomena of communication : the intention, the conventional nature of the act, the alternance of turn taking in its composition, are not always present, far from it, at all levels of animal development, nor at all stages of human ontogenesis, nor at any time an adult human being acts. The description of an isolated form of behaviour, no matter how fine and stable, gives no information as to its status in the conduct of the individual. Isolated analysis of an individual's look confirms this point of view. In their study on "exchanges", DUBON et al. have observed that the look directed at a partner in the first few months

of life has a completely different status from that coming after learning to walk unaided. Yet morphological description of the look alone is very similar for both periods. It is not the physical realization of the act that is essential, but the level at which it is inserted in over-all behaviour.

As a corollary to this, it also appears that it is no longer possible to isolate one "communication channel" more than any other. To echo the voice of COSNIER (1982), communication is "multichannelled"; for the ages with which we are concerned here, the research studies I have just analysed evidence that the common construction processes of a universe of reference, the child will make use of any path open to him in order to signal his intentions. If, ordinarily, oral language begins to be integrated into this communication activity during the second year of childhood, its absence - for example, in the case of total infant deafness - is not in itself an obstacle to the conventionalization of procedures as I have noted elsewhere (DELEAU 1979, 1982). There again, it is not the channel, i.e. the physical support for information, which is essential, it is the way it is processed at both the levels of coding and decoding.

The privileged target of studies dealing with communication during the second year is, therefore, the processes of conventionalization which become established between the child and his familiar faces (in particular, the adults). The processes concern all the modes of expression, and construct the signification of situations - one could say contexts, within which the child's intentions and those of his interlocuters become shared.

The second major transformation accompanying the methodological evolution is that which concerns the processes of psychogenesis. In order to be brief, I shall just say that the study of communications, as it has just been specified, is essential since communication interactions play a role in the shaping of the child's psychological organization.

An observation made by VENEZIANO (op.cit.) is particularly revealing in this respect : "the language status of a sound produced by the child is not easily disassociated from the adult's ability to confer on the child's sound this very same status". Although, in the context, this observation indicates more of a difficulty on the level of methodology, it raises an essential problem for the study of psychogenesis : the status conferred by the adult on the child's forms of behaviour is a determining factor in their construction. MALRIEU and DELSOL place themselves in this hypothesis when they situate the child's mastery of language among "a series of transformations which could be termed cultural, forms of behaviour, and personality". If the child's own independent action has a constructive role, it is "in co-operation with the others, according to the guide lines traced out for him by the activity into which he has been plunged and whose meaning he will relentlessly strive to understand"

The formative function of what could be termed tutoring interactions (BRUNER 1983) resides in the fact that most of the interactions between adult and child are communication interactions, i.e. ones in which the adult has intentions, attributes them to the child, uses conventionalized means of expressing his intentions, and conventionalizes the child's activities.

A fair number of studies have dealt with the processes by which, from a very early age, adults attribute a child with intentions : leaving a "place" for answers he is credited with (STERN, 1975; POMERLEAU et al. 1981), commenting his actions, mimicries or emotional reactions (JOSSE, ROBIN, 1983; RABAIN 1983). These processes, which some psychoanalysts connote by the expression "the mother's anticipative illusion", are not strictly inter-individual processes : they are largely dependent on the social setting within which the exchanges take place and which govern the majority of the interpretations. Thus, for example, according to the WOLOFS "weaning constitutes an important point of reference in time, collective representations crystallizing a certain number of transformations over one period.

Weaning is often given as the starting point for a whole series of acquisitions : being clean, walking, talking, going with other children, being sociable, no longer being peevish (RABAIN, 1979, p.42).

On the other side, it is obvious that when addressing the child the adult uses highly conventionalized means. These evidently include "language", that is to say a set of conventions bearing not only on morphosyntactical aspects, but also on rules of usage which act so that the same syntactical forms not be used to express a request according to the rank, position, and situation of the interlocuters. These means also include conventional forms of imitation and gesticulation.

There again, these conventionalized forms are largely dependent on systems of cultural coding within which the interactions occur.

Finally, and this is perhaps the most remarkable aspect, the action of the adult in these situations of communication, has a restraining role on the child's own independent action. This role appears clearly as far as both vocal and gestural productions are concerned : waving "good-bye" with the hand, for example, is very little tolerant of variants, otherwise the gesture loses all significance - i.e. first and foremost, its power to mobilize another human being. Repetition in "nursery games" represents a field of restricting reactions since it demands on the part of the child a much greater degree of "stylization" for his own actions. Whereas actions on objects are concerned, the effects are linked linearly to stable parameters (intensity, length of effort, ampleness of movement...), here the effects are linked in quite an aleatory way to someone else understanding an action which can only be efficient if it is stylized.

It is all the more important to note the phenomenon since it is partly observed when a physical object is at the centre of the transaction between adult and child : there are preco-

cious techniques for evidencing the object and mobilizing the child's own independent action in relation to the object.

Rather than language alone, it is the set of symbolic devices available in culture which is the support for communication interactions. From the point of view of analysis of psychogenesis, it is those processes by which the adult (or and older child, or even, in part, a peer) sets aside for the child "a proximal zone of development" which appear essential. If the study of communication interactions is important, it is above all because psychological development is not an endogenous process taking place in isolation.

AGE GROUP / POSITION	10-12	13-15	16-18
OFFER	0	23	34
REQUEST	8	16	48

TABLE I

Frequency of the child taking the initiative in reciprocal sequences.

POSITION OF ADULT BEFORE CHILD'S INITIATIVE	AGE GROUPS			CHILD'S INITIATIVE
	10-12	13-15	16-18	
OFFER	100	91	57	OFFER
REQUEST	100	75	36	REQUEST
OFFER	-	9	43	REQUEST
REQUEST	-	25	64	OFFER

TABLE II

Frequency of child's initiatives in reciprocal sequences, as as function of the adult's immediately preceding position.

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